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Gyorgy Miklos

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ERICSSON INC.  
6300 LEGACY DRIVE  
M/S EVR 1-C-11  
PLANO, TX 75024

EXAMINER

WOO, KUO-KONG

ART UNIT

PAPER NUMBER

4133

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,866	<b>Applicant(s)</b> MIKLOS ET AL.	
	<b>Examiner</b> KUO WOO	<b>Art Unit</b> 4133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/10/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Specification**

1. Claims 25-48 are pending on this office action. Claims 1-24 have been cancelled.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The disclosure of Description of Preferred Embodiments is objected to because of the following informalities and appropriate corrections are required.
  - A: (Page 4, line 15). Disclosing the signal steps 2A-“2E”.  
Examiner believes shall be steps 2A-“2F”
  - B: (Page 6, line 30) BS1-BS3 in the second step “1C” above.  
Examiner believes shall be step “1B” above.
  - C: (Page 10, line 19) base stations “B1”, BS3.  
Examiner believes shall be” BS1”.
  - D: (Page 12, lines 11-12) Unrelated specification statement “(Andras or Gyorgy is this correct or what should be the correct way of addressing? YES)”.  
Examiner believes the sentence shall be deleted.

**Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –  
(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 25, 26, 30, 33, 41 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al. (U.S. Patent Application Number 20030224774 A1).

As to claim 25” A method for a cellular mobile communications system, comprising the steps of: selecting an active set of base stations from a plurality of base stations, wherein each base station in said active set is capable of providing parallel radio links with a mobile station; transmitting a packet uplink from the mobile station” Cheng discloses (Paragraph 6, the transmission of data packets on a reverse link between a mobile station and group of selectable base stations or sectors), Herein reverse link and selectable cells are means to uplink and base stations in the active set;

“Selecting one radio base station from the active set of base stations based upon said quality measures; transmitting information on the selected base station uplink from the mobile station” Cheng discloses (Paragraph 35, if the reverse link should be transferred to the new

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selected cell b, the switching status indicates on the Reverse Channel Quality Indicator channel for the selected cell b also occur), Wherein the quality of link is measured on selected base station;

“forwarding the data packet on a fixed link from the selected radio base station” Cheng discloses (Paragraph 5, the MS uses the carrier signal strength to interference ration measurements to select the best cell for forward link transmission and indicates to the members of the active set).

As to claim 26 “The method according to claim 25, wherein all the active set base stations provide parallel radio downlinks to the mobile station” Cheng discloses (Paragraph 5, the MS uses the carrier signal strength to interference ration measurements to select the best cell for forward link transmission and indicates to the member of active set).

As to claim 30 “The method of claim 25, wherein the selecting step is made before transmission of said packet and the link quality predicting step is based on the measure received by the mobile station with respect to one or more packets transmitted previously to said packet” Cheng discloses (Paragraph 18, the active set are selectable for preferred cell site connection. The active set is for the forward fundamental channel or dedicated control channel updated by the cells based on the pilot strength feedback from MS), wherein feedback signal is previous transmitted signal.

As to Claim 33 “A mobile station for use in a cellular communications system, comprising: means for transmitting a packet to be received by two or more base stations” Cheng discloses (Paragraph 6, the transmission of data packets on a reverse link between a mobile station and group of selectable base stations or sectors);

“means for receiving a measure of radio link quality experienced by said base stations during the data packet transmission” Cheng discloses (Paragraph 17 the MS decides to request a new base station selection by sending a request on the reverse Channel Quality Indicator channel that connectivity to new base station is desired to be obtained);

“a posteriori selecting means for selecting, based upon said measures, one of said base stations after said packet has been transmitted from the mobile station; or, alternatively, a priori selecting means comprising means for predicting the radio link quality and adapted for selecting one of said base stations based on prediction of said radio link qualities before said packet is transmitted” Cheng discloses (Paragraph 3, For a reverse link soft handover from one cell to another cell, the communication path is maintained during the cell switching, without disrupting the original communication path (make before break transfer), Herein Alternatively, only one of limitation, before said packet is transmitted is chosen. The base station is selected before the transmission is made as teaches here as make before break transfer;

“means for transmitting uplink information on which of the active set base stations that is selected for the packet to be forwarded on a fixed link by the selected base station” Cheng discloses (Paragraph 5, the MS uses the carrier signal strength to interference ratio measurements to select the best cell for forward link transmission and indicates to the member of active set). It is obvious that base station is connected by fixed link.

As to claim 41 “The mobile station of claim 33, adapted for transmitting the information on the priori selected base station with the relevant packet” Cheng discloses (Paragraph 5, the MS uses the carrier signal strength to interference ratio (C/I) measurement to select the best cell for forward link transmission and indicates to the members of the active set). Herein C/I is the information on the priori selected BS.

As to claim 42 “The mobile station of claim 33, wherein said prediction means uses a measure of radio link quality received in response to one or more previously transmitted packets” Cheng discloses (Paragraph 18, the active set is selectable for preferred cell site connection. The active set is for the forward fundamental channel or dedicated control channel updated by the cells based on the pilot strength feedback from MS). Where the feedback signal is considered as previous transmitted signal.

6. Claims 44 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Schramm et al. (U.S. Patent Number 6542742 B2).

As to claim 44 “A base station having means to receive a packet from a mobile station and means to send an acknowledgement to the mobile station in response to the received packet, said base station comprising: detecting means for detecting information from the mobile station on a specific base station being selected” Schramm discloses (Col. 1, lines 31-33, these measurements can be taken of the quality of the connections, or links, between the MS and the base station or surrounding base stations);

“means for selectively forwarding the received packet further in a connected radio network when said detecting means detects the base station is being selected” Schramm discloses (Col. 3, lines 15-18, the maximum Quality of Service can be given in term of higher data/bit rate or throughput. This new method of selecting the best cell is done by extending the known algorithm for cell selection and handover) wherein handover is mean to transfer or forward to further in the network.

As to claim 45” The base station of claim 44, adapted for receiving said information subsequent to the packet being received by the MS ” Schramm discloses (Mobile Station for communicating with said mobile system though an air interface link to one of said at least one Base Stations).

#### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 28,29,38,40, and 43 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Cheng et al. (U.S. Patent Application Number 20030224774 A1) as applied to claim 25 and 33 above, and further in view of Longoni et al. (U.S. Patent Number 6493564 B2 ).

As to claim 28 Cheng does not expressly disclose “The method of claims 25, wherein the measure of the radio uplink quality is a transmitted power command.” Longoni discloses (Abstract, power control and transmits a power control command defining the variation of the target set point to the at least one base station).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng’s teaching in invention of Longoni provides a reliability information indicating the transmission quality ( see Col. 4, lines 45-47).

As to claim 29 Cheng does not expressly disclose” The method of claim 25, wherein the measure of the radio link quality is a signal to interference ratio” Longoni discloses (Col.1, lines 15-18, summary of invention, a mobile radio network, the transmitting power of a mobile station is adjusted by a closed loop power control in order to keep the received uplink Signal-to-Interference Ratio (SIR) at a given SIR target).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Longoni provides the quality estimate is derived based on combinations of an estimated bit-error rate and frame-error rate is used (see Col.1, lines 34-36).

As to claim 38 Cheng does not expressly disclose "The mobile station of claim 33, wherein said measure of radio link quality is a signal to interference ratio" Longoni discloses (Col.1, lines 15-18, summary of invention, a mobile radio network, the transmitting power of a mobile station is adjusted by a closed loop power control in order to keep the received uplink Signal-to-Interference Ratio (SIR) at a given SIR target).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Longoni provides the quality estimate is derived based on combinations of an estimated bit-error rate and frame-error rate is used (see Col.1, lines 34-36).

As to claim 40 Cheng does not expressly disclose "The mobile station of claim 39, as dependent on the a posteriori selection, wherein the mobile station power control is controlled by power commands received only from one or more of said base stations that have reported positive acknowledgements with respect to the transmitted segments of the relevant packet" Longoni discloses (Col. 2, lines 35-37, The determination of the variation of the target setpoint for power control can be performed

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on the basis of a selection of the best reliability information or, alternatively, on the basis of a predetermined combination of the received reliability information's).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Longoni provides a reliability information indicating the transmission quality ( see Col. 4, lines 45-47).

As to claim 43" The mobile station of claim 33, operative to adjust its output power to the commands received from the a priori selected base station only" Longoni discloses (Abstract, power control and transmits a power control command defining the variation of the target set point to the at least one base station).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Longoni provides a reliability information indicating the transmission quality ( see Col. 4, lines 45-47).

8. Claims 27,31,32 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent Application Number 20030224774 A1) as applied to claim 25 and 33 above, and further in view of Baker et al. (U.S. Patent Application Number 20020119778 A1).

As to claim 27, Cheng does not expressly disclose "The method of claim 25, wherein the measure of the radio uplink quality is an acknowledgement sent in response from one or more of the active set

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radio base stations upon said packet being received” Baker discloses (Abstract, radio communication system is arranged to transmit a series of data packets to a secondary station for acknowledging correct reception of each packet .The primary station transmits error correction information relating to any packets that are not received correctly, thereby enabling the secondary station to extract correctly the data).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng’s teaching in invention of Baker provides scheme to avoid the extra signaling required in transferring logical channels in which a data packet has been received in error and the error correction transmissions have not been completed (See Abstract).

As to claim 31 Cheng does not expressly disclose “The method according to claim 25, wherein said packet is segmented into two or more segments for transmission in subsequent radio frames and the selected base station reassembles the segments into said packet” Baker discloses (Paragraph 28, it is not necessary to transfer all channels to the new BS even when the most recent packet has been positively acknowledged, but different channels can continue to be transmitted from available capacity at different BSs where one BS may not have enough capacity to carry the entirety of the packet traffic to a particular MS). Herein the invention provides packet to be segmented in different channel and reassembled at base station.

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Baker provides greater flexibility for scheduling packets in the network and for mapping the traffic to the available air interface resources (see paragraph 32).

As to claim 32 Cheng does not expressly disclose "The method of claim 27, wherein one or more base stations that have positively acknowledged all previously transmitted segments of said packet are the only ones designated for reception of subsequent segments of said packet" Baker discloses (Paragraph 5, retransmission from first BS being transmission to the MS on one logic channel in parallel with transmission of new packets from second BS on different logical channels to the same MS.

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Baker provides invention to transfer of data transmission from one primary station to another is done by transferring each channel when correct reception of a data packet on that channel has been acknowledged, thereby avoiding the extra signaling required in transferring logical channels. (See abstract).

As to claim 39 Cheng does not expressly disclose "The mobile station of claim 33, further comprising means for segmenting the packet into segments fitting into radio blocks" Baker discloses (Paragraph 28,

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different channels can continue to be transmitted from available capacity at different BSs where one BS may not have enough capacity to carry the entirety of the packet traffic to a particular MS). Herein the invention provides packet to be segmented in different channel and reassembled at base station.

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Baker provides greater flexibility for scheduling packets in the network and for mapping the traffic to the available air interface resources (see paragraph 32).

9. Claims 34 and 35 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Cheng et al. ((U.S. Patent Application Number 20030224774 A1) as applied to claim 33 above, and further in view of Virtanen (U.S. Patent Number 6570862 B2).

As to claim 34 Cheng does not expressly disclose" The mobile station of claim 33, further comprising means for receiving packets transmitted from two or more radio base stations in parallel and combining the packets Virtanen teaches (Col.2, lines 42-47, background art, all the base stations in active group with which the terminal equipment communicates transmit the same signal to the terminal equipment, which may select from said signals the strongest signal components, and advantageously combine them).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Virtanen provides several advantages over the other methods, such as spectral efficiency and the simplicity of frequency planning.( see Col. 1, lines 24-25 ,background art).

As to claim 35 Cheng does not expressly disclose "The mobile station of claim 34, wherein said combining is maximum ratio combining Virtanen teaches (Col.2, lines 47-48, the signal-to-interference ratio of the received signal may thus be maximized).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng teaching in invention of Virtanen provides several advantages over the other methods, such as spectral efficiency and the simplicity of frequency planning.( see Col. 1, lines 24-25 ,background art).

10. Claims 36 and 37 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Cheng et al. ((U.S. Patent Application Number 20030224774 A1) as applied to claim 33 above, and further in view of to Love et al. (U.S. Patent Application Number 20040219917 A1).

As to claim 36 Schramm does not expressly disclose "The mobile station of claim 33, wherein said measure of radio link quality is one or more acknowledgements on the receipt of the transmitted packets" Love teaches (Claim 9, utilizing the information in the ACK/NAK transmission

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coded for the particular communication device in determining uplink transmission activity),

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Cheng's teaching in invention of Love provides quantitatively, soft- handoff improves the capacity/coverage in system( See paragraph 37)

As to claim 37 Schramm does not expressly disclose "The mobile station of claim 33, wherein said measure of radio link quality is a transmit power command received from said base stations" Love teaches (Paragraph 58, each active set BTS uses reverse link interference level, MS scheduling information and power control information to determined a maximum allowed power margin target or limit for each MS served by the BTS).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Schramm teaching in invention of Love provides quantitatively, soft- handoff improves the capacity /coverage in system( See paragraph 37).

11. Claims 46 and 47 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Schramm et al. (U.S. Patent Number 6542742 B2) as applied to claim 44 above, and further in view of to Haas (U.S. Patent Number 5774814).

As to claim 46 Schramm does not expressly disclose "The base station of claim 44, adapted for receiving said information with said



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packet” Haas discloses ( Abstract, the decision-making algorithm employs the information bits in each received signal depending on the calculated probabilities of a correct bit reception and of an erroneous bit reception for each base-station).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Schramm teaching in invention of Haas provides the versions of the signal received by the base-stations in the adjacent cell sites can improve the accuracy of the signal received by the serving base-station. (See Col. 3 lines 49-52).

As to claim 47 Schramm does not expressly disclose “The base station of claim 44, wherein the detection means are adapted for receiving the selection information on a packet-by-packet basis” Haas discloses (Col. 3, lines 31-33, the information content of each detected signal version is compares to each other on bit by bit basis).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Schramm teaching in invention of Haas provides the versions of the signal received by the base-stations in the adjacent cell sites can improve the accuracy of the signal received by the serving base-station. (See Col. 3 lines 49-52).

11. Claim 48 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Schramm et al. (U.S. Patent Number 6542742 B2) as applied to claim 44 above, and further in view of to Kondo (U.S. Patent Number 5722080).

As to claim 48 Schramm does not expressly disclose "The base station of claim 44, further comprising means for timing downlink transmission of radio frames by use of a synchronisation signal received via an interface to a fixed part of the network for parallel transmission of radio frames from all base stations of an active set" Konodo teaches (Col. 3 lines 35-40, in communicating with the mobile station, the radio base station performs transmission/reception at the timing based on home radio frame synchronization signal. That is, the reference station transmits signal to mobile station on the basis of the home radio frame synchronization signal).

Therefore, it would have been obvious to one of ordinary skill of art at the time the invention was made to use Schramm teaching in invention of Kondo provides frame synchronization for radio interval between a reference station and radio base station even if a large zone radius is set, and time alignment control is required. (See col. 2, summary of the invention, lines 21-25).

### **Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent number 5502721 A to Pohjakallio discloses packet data transfer similar invention as recited in claim 25.
- U.S. Patent number 6414947 B1 to Legg et al. discloses method of resource allocation as similar invention as recited in claim 29.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to KUO WOO whose telephone number is (571)270-7266. The examiner can normally be reached on Monday through Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abul Azad can be reached on 571-272-7599. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KUO WOO/  
Examiner, Art Unit 4133

/ABUL AZAD/  
Supervisory Patent Examiner, Art Unit 4133

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